

WHAT IS CLAIMED IS

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1. A method of allocating a new radio resource to a link between a base station and a requesting mobile station in a cell site of the base station, comprising the steps of:

10 detecting use-state information of radio resources and priority information of mobile stations using the same radio resource of both the base station of concern and neighboring base stations; and

allocating a new radio resource to the link between the base station of concern and the requesting mobile station based on the use-state information and the priority information.

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2. A method of allocating a new radio resource to a link between a base station and a requesting mobile station in a cell site of the base station, comprising the steps of:

20 detecting use-state information of radio resources and priority information of mobile stations using the same radio resource of both the base station of concern and neighboring base stations;

25 determining whether a direction of link data transmission related to the non-allocated radio resource is the same as a direction of link data transmission related to an allocated radio resource in one of the cell sites of the neighboring base stations; and

30 allocating a new radio resource to the link between the base station of concern and the requesting mobile station based on both the use-state information and the priority information in said detecting step and a result of the determination in said determining step.

3. The method according to claim 1, further comprising the steps of:

determining whether there is a non-allocated radio resource in the cell site of the base station of concern;

5 determining whether the non-allocated radio resource is not in use in the respective cell sites of the neighboring base stations;

determining whether a direction of a link data transmission related to the non-allocated radio resource is the same as a direction of a link data transmission related to an allocated radio resource in one of the cell sites of the neighboring base stations;

determining whether a level of priority of the requesting mobile station is higher than a level of priority of each of the mobile stations using the radio resources allocated; and

15 determining whether allocation of the non-allocated radio resource in the cell site of the base station of concern to the link is possible.

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4. The method according to claim 2, wherein a radio network controller maintains a radio resource management table, and, in said detecting step, the base station of concern detects the use-state information and the priority information from the radio resource management table of the radio network controller by sending an inquiry from the base station of concern to the radio network controller.

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5. The method according to claim 2, wherein a radio network controller maintains a radio resource management table, and, when

the radio resource allocation and radio resource releasing are performed, the base station of concern transmits a radio resource notification to the radio network controller so that the radio resource management table is updated.

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6. The method according to claim 2, wherein each of the base station of concern and the neighboring base stations maintains the use-state information of that base station and the priority information of the mobile stations related to that base station, and, in said detecting step, the base station of concern detects the use-state information and the priority information from the respective neighboring base stations by sending an inquiry from the base station of concern to each of the respective neighboring base stations.

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7. The method according to claim 6, wherein, when transmitting the inquiry, the use-station information or the priority information between the base station of concern and each of the neighboring base stations, a dedicated radio channel is used as a path of the data transmission.

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8. The method according to claim 2, wherein each of the base station of concern and the neighboring base stations maintains the use-state information of that base station and the priority

information of the mobile stations related to that base station, and, when an inquiry from one of the neighboring base stations is received at the base station of concern, the base station of concern transmits to said one of the neighboring base stations the use-state information and the priority information both related to the base station of concern.

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9. The method according to claim 8, wherein, when transmitting the use-station information or the priority information between the base station of concern and said one of the neighboring base stations, a dedicated radio channel is used as a path of the data transmission.

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10. The method according to claim 2, wherein respective identifications of the neighboring base stations are predetermined and recorded, in advance, in the base station of concern.

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11. A base station including a resource allocation control unit which allocates a new radio resource to a link between the base station and a requesting mobile station in a cell site of the base station, the resource allocation control unit comprising:

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a first unit detecting use-state information of radio resources and priority information of mobile stations using the same radio resources of both the base station of concern and neighboring base

stations; and

a second unit allocating a new radio resource to the link between the base station of concern and the requesting mobile station based on the use-state information and the priority information.

12. The base station according to claim 11, further comprising a determining unit determining whether a direction of link data transmission related to the non-allocated radio resource is the same as a direction of link data transmission related to an allocated radio resource in one of the cell sites of the neighboring base stations, wherein said second unit allocates the new radio resource to the link based on both the use-state information and the priority information detected by the first unit and a result of the determination provided by the determining unit.

13. The base station according to claim 11, further comprising:

a third unit determining whether there is a non-allocated radio resource in the cell site of the base station of concern;

a fourth unit determining whether the non-allocated radio resource is not in use in the respective cell sites of the neighboring base stations;

a fifth unit determining whether a direction of a link data transmission related to the non-allocated radio resource is the same as a direction of a link data transmission related to an allocated radio resource in one of the cell sites of the neighboring base

stations;

a sixth unit determining whether a level of priority of the requesting mobile station is higher than a level of priority of each of the mobile stations using the radio resources allocated; and

5 a seventh unit determining whether allocation of the non-allocated radio resource in the cell site of the base station of concern to the link is possible.

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14. The base station according to claim 12, wherein a radio network controller maintains a radio resource management table, and, said first unit detects the use-state information and the priority
15 information from the radio resource management table of the radio network controller by sending an inquiry from the base station of concern to the radio network controller.

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15. The base station according to claim 12, wherein a radio network controller maintains a radio resource management table, and, when the radio resource allocation and radio resource releasing are
25 performed, the resource allocation control unit transmits a radio resource notification to the radio network controller so that the radio resource management table is updated.

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16. The base station according to claim 12, wherein each of the base station of concern and the neighboring base stations

maintains the use-state information of that base station and the
priority information of the mobile stations related to that base
station, and said first unit detects the use-state information and the
priority information from the respective neighboring base stations by
5 sending an inquiry from the base station of concern to each of the
respective neighboring base stations.

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17. The base station according to claim 16, wherein, when
transmitting the inquiry, the use-station information or the priority
information between the base station of concern and each of the
neighboring base stations, a dedicated radio channel is used as a
15 path of the data transmission.

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18. The base station according to claim 12, wherein each of
the base station of concern and the neighboring base stations
maintains the use-state information of that base station and the
priority information of the mobile stations related to that base
station, and, when an inquiry from one of the neighboring base
25 stations is received at the base station of concern, the base station of
concern transmits to said one of the neighboring base stations the
use-state information and the priority information both related to the
base station of concern.

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19. The base station according to claim 18, wherein, when

transmitting the use-station information or the priority information
between the base station of concern and said one of the neighboring
base stations, a dedicated radio channel is used as a path of the data
transmission.

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20. The base station according to claim 12, wherein respective
10 identifications of the neighboring base stations are predetermined
and recorded, in advance, in the base station of concern.

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